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ABSTRACT

This study investigated apsects of state regulation of public research or doctoral universities in all states and territories of the United States. The study examined: (1) dimensions of state control and administrative flexibility, and changes occurring between 1983 and 1995; (2) the extent to which state regulation of public universities is a product of the economic, political, and social characteristics of the particular state; (3) whether particular organizational characteristics of the universities attract different amounts and types of regulation; and (4) whether varying degrees of regulation and autonomy exert influences on measures of university quality. Campus and state characteristics data were assembled for 226 universities, 144 of them publicly controlled; 37 state characteristics and four broad campus dimensions were identified. Management flexibility and state regulation data were obtained for 122 public universities in 50 states; 47 flexibility and control variables were identified. Findings indicated: the strength and independence of both academic and administrative campus segments; increased flexibility of campuses in many states in their academic, financial, and personnel transactions; little evidence of a connection between state control and campus characteristics; and no evidence that flexibility exerts a significant influence on measures of faculty and student quality. Substantial data tables summarizing the results are appended. (Contains 24 references.) (MSE)

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STATE REGULATION AND ADMINISTRATIVE FLEXIBILITY AT PUBLIC UNIVERSITIES

AIR Forum Paper
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Jean Endo
Editor
AIR Forum Publications

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ABSTRACT

Have regulatory practices changed in the past decade and does flexibility make a difference in campus effectiveness? The study first measures the academic, personnel and financial dimensions of state regulation, as well as the changes that have occurred since 1983. Second, the study examines the relationship between state regulation and various state characteristics, and tests the hypothesis that state characteristics have an effect on the level of flexibility granted to university campuses. Third, the research analyzes the relationship between state regulation and campus characteristics, and examines whether the level of campus flexibility is associated with measures of university quality.

STATE REGULATION AND ADMINISTRATIVE FLEXIBILITY AT PUBLIC UNIVERSITIES

The Research and Policy Problem

In more than a few states, university financial and personnel transactions may receive redundant scrutiny by central system offices, legislative committees, and state executive staff. In addition, there are now a myriad of state and federal regulations and reporting requirements related to affirmative action, Americans with disabilities, athletics, freedom of information, clean air, campus crime, fuel use and contamination, occupational health and safety, research involving human subjects and warm blooded animals, radiation safety, student financial aid, waste disposal, and student privacy rights, among others. "Taken by itself, any single action may not be unbearably intrusive, but the combined impact of many actions can nearly suffocate an institution" (Carnegie Foundation, 1982, p. 65).

While demands for accountability and control have produced, over the past 30 years, an increase in governmental regulation, the more recent atmosphere in Washington, D.C. and several state capitals reflects a growing consensus that regulation can be both costly and unproductive.

Most organizational behaviorists believe that an increase in monitoring activity increases operating costs, both for those doing the monitoring and for those being monitored (Downs 1967). Many authors in higher education decry the imposition of regulations that hamper an institution from adjusting to changing circumstances and needs. A number of publications by the Association of Governing Boards (Gardner, et.al., 1985), the Carnegie Foundation for the Advancement of Teaching (1982), the Carnegie Council on Policies Studies in Higher Education (1976, 1980), the Carnegie Commission on Higher education (1973), and the Sloan Commission (1980) have agreed that over-regulation is wasteful.

The Carnegie Commission (1973) concluded that campus autonomy has declined substantially since the end of World War II. For the nation as a whole, state legislative enactments per year increased from roughly 15,000 in the 1950s to 50,000 annually in the 1980s (Fisher 1988). While not all of these bills affect higher education, Fisher examined four representative states and found that nearly half of the higher education laws in this century had been enacted in the most recent two decades. However, the nature and intensity of these measures differ from state to state due to the varying nature of state history, structure, culture, law, educational standards, and political tradition. In heavily regulated environments, public universities are treated like "state agencies" and have less flexibility in personnel, financial and academic matters. Campuses in other states are relatively autonomous, and considered to be "state aided" (Curry & Fisher 1986).

The 1982 study by the Carnegie Foundation reported that state officials fail to reward efficient leaders, and that campus managers feel caught in a bureaucratic web that demands accountability, but provides few incentives for responsible management. Administrative dissatisfaction with over-regulation is worth examining because the job satisfaction literature indicates a strong connection between satisfaction and productivity.

Thus, there are multiple reasons to be concerned about unnecessary regulation. First, the regulatory activity itself may be unproductive and wasteful. Second, regulatory activity may reduce managerial job satisfaction which in turn further lowers organizational productivity and adaptation. Since everyone seems to agree that educational institutions, along with the rest of society, need to become more productive, we need to remove as many obstacles to increased productivity as possible.

Much has been written about government regulation of public higher education, but there are few empirical studies except Volkwein's National study in the 1980s that analyzed the relationship of state regulation to various campus and state characteristics. Using data collected in 1983, his study provides the only national evidence of a correlation between state attributes and state controls (1987). Moreover, Volkwein found no relationship between institutional quality and academic and financial autonomy (1986, 1987, 1989). Volkwein's data suggest that ample funding and institutional size are crucial elements for productivity and quality, as compared to campus autonomy alone. He indicated that the connection between campus autonomy and quality are not as clear as some higher education authors and Carnegie reports have claimed.

Many authors disagree with Volkwein's conclusion. "Most of us believe that the great colleges and universities have been those that were the least managed" (Atwell, 1985). Newman (1987) notes cases of serious political intrusion with negative consequences.

There is much we do not know. Have regulatory practices changed in the past decade and does flexibility make a difference in campus efficiency and effectiveness? Does Volkwein's conclusion about the lack of connection between campus autonomy and institutional quality still persist? Is there 1990s evidence supporting the claim that restricted autonomy jeopardizes quality? Are campus managers more satisfied under conditions of autonomy?

Purpose of the Study and Conceptual Framework

This study addresses four research questions:

1. What are the dimensions of state control and administrative flexibility among public universities and what changes have occurred between 1983 and 1995?

2. Does state regulation of public universities appear to be the product of the economic, political, and social characteristics of the 50 states?

3. Do particular organizational characteristics of public universities seem to attract different amounts and types of regulation?

4. Do varying degrees of regulation and autonomy exert influences on measures of university quality?

Contemporary organizational threory stresses the role of the organization's environment as a crucial influence on the life of an organization, its structure, and its activities. Contingency theory (Lawrence and Lorsch, 1967), the natural selection model (Aldrich, 1979), and the resource dependence model (Pfeffer and Salancik, 1978) all focus on the external environment. Volkwein (1986, 1989) found support for the resource dependence model in his studies of university quality. Public universities are viewed as complex, loosely-coupled organizations, and their relations with state governments form a critical component of the external climate within which they pursue their goals (Birnbaum, 1988). Scholars generally divide an organization's environment into economic, political, social, and technological dimensions.

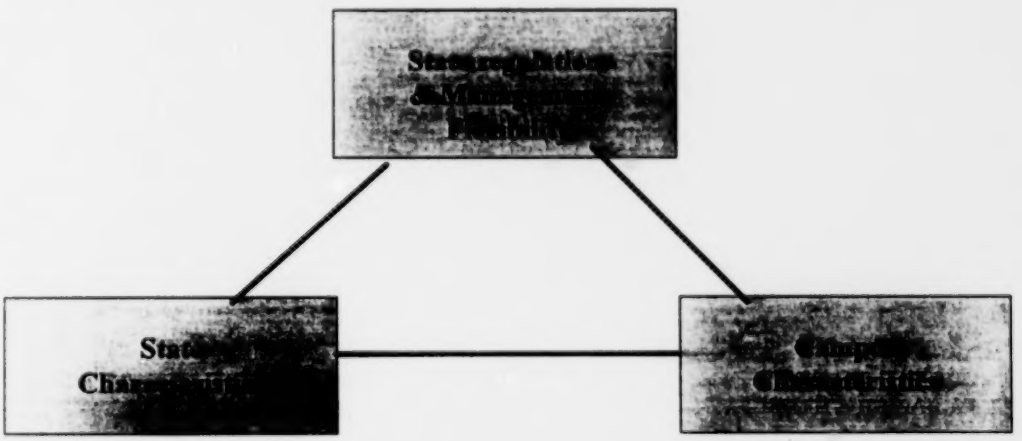
Structural/functional perspectives from the literature on organizations and bureaucracies encourage researchers to attend to those variables that reflect the influence of organizational structures (Hall, 1991). Studies of colleges and universities, as particular types of organizations, have shown that campus mission, size, wealth, and selectivity exert significant influences (ranging from small to large) on a variety of college outcomes including student values, aspirations, educational attainment, career development, and earnings (Pascarella and Terenzini, 1991). Volkwein (1986, 1989, 1995) has demonstrated that a variety of university characteristics tend to cluster together along the dimensions of mission, size, financial support, and complexity.

The literature on university autonomy suggests that there are multiple dimensions of regulation. Berdahl (1971) distinguishes between "procedural" and "substantive" autonomy. Levy (1980) and the Carnegie Foundation (1982) identify three important areas of university autonomy: financial or budgetary, personnel or appointive, and academic. In his studies of state regulation and campus flexibility, Volkwein (1986, 1987) found that the financial and personnel dimensions collapsed into a single factor, leaving academic and financial/personnel as the two autonomy dimensions.

Research Methods

It is not certain that the association between state regulation and state characteristics, and between state regulation and campus characteristics, has changed significantly in the past decade. What has changed between the early 1980s and the early 1990s is the improved quality of nationally available NCES, IPEDS, and U.S. Census data. Many organizational and financial characteristics are now contained in IPEDS data that were less complete and more primitive in the early 1980s. Even U.S. Census data about state characteristics has received modest improvement. Moreover, significant and recent national databases are now available from the National Research Council study of doctoral programs(1995) and from Hugh Graham's work at Vanderbilt (1996). This study collects and analyzes the 1995 evidence from these various sources. In addition, Volkwein's 1983 survey did not include academic items, so he used data from a 1980 Carnegie telephone survey. Another goal of this study, therefore, is to develop better measures of academic regulation than those used in the 1980s.

Borrowing the Volkwein instrument and using similar sets of measures, this study observes what changes in administrative flexibility and state regulation have occurred since 1983, and examines these changes in relation to the characteristics of university campuses and the characteristics of the states within which they are located. Thus, the study focuses on the following three point relationship:



Target Population, Data Sources, & Variable Summary

The target population is all institutions in the United States and its territories classified by the Carnegie Foundation as Research I & II or Doctoral I & II. Presidents and Chancellors designated a campus contact person to assist the researchers with data collection on each campus.

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Methodology

Data Collection & Sources

State Regulation Survey

(Financial, Personnel, Academic)

Campus Characteristics

IPEDS, NCES , NRC Study, Barron's, Graham Database, Higher Education Directory, US NEWS, AAUP Salary Survey

State Characteristics

US Census data, Chronicle Almanac, Grapevine, Public Administration Literature, Center for Study of States

Database

Statistical Analysis SPSS PC

Descriptive Statistics

Factor Analysis

Scales Alpha Reliability

Financial Flexibility Variables

- Revenue Flexibility
- Expenditure Detail
- Budget Detail
- T & F revenue
- Appointing Personnel

◆ **Single variables**

Budget flexibility
Setting Tuition

Academic Flexibility Variables

- Program Flexibility
- Acct. requiremnt
- Degree requirements
- Standards
- Department Flex.
- Prog. Discontinuance

State Variables

- State Size
- Public Sector strength
- Income & education
- Political culture
- Mobility & Growth

◆ **Single Variables**

Agricultural Employment, Higher Ed. Coord. Board, Governors Power, Population Characteristics Average Campus Size.

Campus Variables

- Size
- Wealth
- Student quality
- Faculty quality

◆ **Complexity**

Age, Medical, Pct Minorities, Constitutional Rec., Flagship, Dormitories, Rural/Urban, Agriculture College Unionization, Number VPs

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The Methodology Chart summarizes the various measures and data sources. The information on state regulation and campus flexibility is obtained from survey data, while the campus and state characteristics is obtained from a variety of sources. Campus and state characteristics data have been assembled for 226 universities, including 144 publicly controlled. Management flexibility and state regulation data have been obtained for 122 public universities in 50 states.

State regulation: Rules, legislation, and procedures, prescribed by the states to control academic, financial and personnel transactions of universities, are measured by campus responses to survey items and scales originally developed by Volkwein (1986, 1987, 1989), but borrowed and enhanced for this study. The survey collected responses to questions about 47 types of flexibility and control.

State attributes: Thirty-seven state characteristics separate into three broad areas: economic (e.g., per-capita income, tax capacity, support for higher education, poverty rate), social/demographic (e.g., population attributes, mobility, ethnic and age profiles, education levels), and political/bureaucratic (e.g., relative size of state government, governor's power, political culture, voting patterns). State characteristics data have been obtained from NCES "State Higher Education Profiles," from U.S. Census Data, from the Center for the Study of the States, and from other higher education and public administration literature.

Campus characteristics: Based on the organizational literature (Hall, 1991; Volkwein 1986), campus organizational dimensions separate into four broad categories: organizational size, financial support, mission/complexity/diversity, and quality/selectivity. Many campus organizational measures come from IPEDS and other data supplied by the National Center for Education Statistics. Variables reflecting faculty and student quality have been constructed from the national survey of doctoral program quality by the National Research Council, from the data assembled by Graham and Diamond (1996), and from the student and campus data reported in *Barron's* and *U.S. News*. In addition, we obtained AAUP salary data and within-campus Directory information about administrative officers and colleges and schools.

Analytical Procedures

As the Methodology Chart indicates, the data assembled from these various sources were merged into a database and manipulated using SPSS-PC. We concluded data collection during 1995, and in early 1996 completed a series of data reduction steps. We conducted principle components analyses to confirm the dimensions of regulation/flexibility, state attributes, and university organizational characteristics. The factor analytic results are contained in Tables 1-4 and listed in the boxes at the bottom of the Methology Chart. Among the 26 survey questions about financial and personnel transactions, we found five dimensions of flexibility plus two individual variables that did not load on these five factors. Shown in Table 1, these factors reflect various aspects of campus flexibility over managing budgets and revenues, expending funds, setting tuition, and appointing personnel without external approval. Regarding the 21

survey questions about academic flexibility, we found six factors that encompass all the academic items. Shown in Table 2, these factors reflect an institution's autonomy over academic programs, degree requirements, standards, and departments, as well as the institution's freedom from state imposed accountability requirements.

The 37 state attributes in our dataset separate into five factors that incorporate the majority of measures, but ten individual measures do not load heavily on any particular factor. As shown in Table 3, the five State Factors combine measures of size, income and education, political culture, mobility and growth, and public sector strength in the form of government employees and expenditures for public education. Regarding the 42 campus measures, we found three separate dimensions (shown in Table 4) reflecting organizational size, wealth, quality, and complexity, although the complexity measures are not highly enough correlated to form a common factor.

The results of the principle components analysis produced factor scores which we exported and used in the subsequent regression analysis. (Principle components analysis produces standardized scores with a mean of zero and a standard deviation of one for each factor.) We treated Faculty Quality as a separate scale (alpha=. 94) because the NRC and Hugh Graham data on faculty publications and citations are missing for some Doctoral I and II campuses. Including these variables in the factor analysis would have reduced by about 20 the number of cases with useable factor scores. The Faculty Quality Scale combines multi-year per faculty measures of publications and citations with 1990 Federal R&D per faculty member.

We use descriptive statistics to address the first research question about the current state of campus autonomy and the changes occuring since 1983. To address the second, third and fourth research questions, we use OLS stepwise regression with pairwise deletion of missing cases.

RESULTS

What are the dimensions of state control and administrative flexibility?

Our analysis identifies six separate measures of academic flexibility and six of financial/personnel flexibility. Consistent with the steps taken by Volkwein (1986, 1987), we combined these to form two overall measures of flexibility/regulation. Table 5 shows the correlations between these seven measures of financial flexibility and seven measures of academic flexibility (six separate measures plus one combined). The generally low and non-significant correlations indicate that these two dimensions indeed reflect different aspects of the relationships between universities and state governments.

The attached Flexibility Grid shows our classification of the 50 states on their relative academic and financial autonomy. For each of the two flexibility dimensions, we took the separate factor scores from the principle components analysis and added them to produce a single overall scale for academic flexibility and one for administrative. Each state scoring one standard

State Flexibility Grid

Financial & Personnel Flexibility

Academic Flexibility	Low	Medium	High
Low	IL	TN, SD, CO, SC, MD, GA, LA, MO, MN, NV, ID	OK, MS
Medium	HI, AR, CA, KS	NC, ME, TX, WA, NB, AZ, MT	KY, NH, IN, UT, CT
High	NY, VA, AK, FL, NJ, WV, PA, RI	OR, DE, MA, WI	OH, ND, MI, NM, WY, VT, AL, IA

deviation or more above the mean is classified "high;" each scoring one standard deviation or more below the mean is "low." The rest are "medium." The universities with the greatest flexibility and the least state oversight on both dimensions are in the high/high box. States like Ohio, New Mexico, and Michigan enjoy above average autonomy on both dimensions. On the other hand, Illinois is the only state in the low/low box, indicating that universities in Illinois have comparatively less autonomy and more state oversight than their peers in this study.

Reflecting the independence of these two dimensions, some states rate high/low while others rate low/high. For example, New York and Virginia are relatively high on academic and relatively low on administrative flexibility. On the other hand, Mississippi and Oklahoma experience the opposite condition: high administrative, low academic.

What changes have taken place between 1983 and 1995?

To compare the regulatory changes over time, we first identified the items that are common to both the 1983 and 1995 survey instruments. We found over two dozen. Tables 6 and 7 display the results for the two time periods.

Table 6 shows the areas of financial control and flexibility, and indicates that the number of states issuing line item budgets has dropped from 14 to 10. Those requiring state approval to shift funds between major budget categories has fallen from 11 to 2. Elaborate state preaudits of expenditures decreased from 11 to 4. Only 12 states now cut all checks and regard tuition as state revenue (versus 14 and 18 earlier). Twenty states still force their universities to spend all their funds by attempting to recover year-end budget balances (down from 25 in 1983).

From the campus perspective, there are five other areas of improved flexibility shown in Table 6. Nine more states (24 versus 15) now receive lump sum budgets. In 1995, 17 more states give universities the flexibility to shift funds among budget categories compared to 1983, and universities in 44 states retain and manage most revenues from research, food service, and dormitory operations. Eight more states (28 versus 20) give their universities incentives for frugal management by allowing them to retain and invest year-end budget balances; and four more states have shifted their universities to a biennial budget. Thus, in each of the 11 financial areas in Table 6, we see less state control and more campus autonomy.

Turning to Table 7, we see six areas of personnel control and six of academic authority. For 11 of the 12 areas the changes between 1983 and 1995 likewise are in the direction of greater flexibility and autonomy. Only 7 states now impose position ceilings and even fewer dictate a classification system or salary schedule, especially for faculty. In every category, the number of states with such personnel systems has dropped.

State authority to determine campus mission has increased from 7 states to 9 in this time period, but state authority has decreased slightly in each of the other five areas. Ten states exert at least some control over university ability add new undergraduate and graduate programs (down from 16 in 1983), and four states have the authority to review and discontinue undergraduate and graduate progams (down from 7). State approval to add or discontinue academic departments is required in only three states (down from 4).

Tables 6 and 7 in the aggregate suggest that a fair number of states have delegated increased authority to their university campuses since the early 1980s. The states with the most and least improvements in administrative flexibility are shown in Table 8. The table displays the flexibility rank for each state in 1983 and 1995 (Rank 1 = most campus autonomy; Rank 50 = most state control). The change column show the difference in the two ranks. Universities in states at the top of the table (North Dakota, Connecticut, Wyoming) have experienced greater autonomy, relative to others, during this 12 year period. Universities in states at the bottom of the table (Idaho, Rhode Island, Pennsylvania) have declined in autonomy, relative to others. In 1995, only four out of ten states changed their 1983 rank by more than ten positions.

Does state regulation of public universities appear to be the product of state characteristics?

We tested the hypothesis that administrative and academic controls derive from the political, economic and social character of each state. Table 9 shows the OLS Regression results using the two overall flexibility measures as dependent variables, and the various state measures as independent variables. Most state characteristics, including income and education, public sector emphasis, mobility and growth, political culture, and Governor's power are weakly correlated with the measures of regulation and autonomy. The regression results for academic autonomy are especially insignificant, but even the results for administrative and financial flexibility produce only one significant varianble (state size) explaining only 8% of the variance (beta = -.29). The smaller the state, the greater the university flexibility in this area of administrative activity. Thus, we find little evidence of a relationship between a state's characteristics and the regulatory controls it imposes on public universities.

Do particular organizational characteristics of public universities seem to attract different amounts and types of regulation?

We also tested the hypothesis that administrative and academic controls are stimulated by university behavior. Table 10 shows the OLS Regression results using the two overall flexibility measures as dependent variables, and the various organizational characteristics as independent variables. University age, size, wealth, quality, complexity, and stature are weakly correlated with the measures of control and autonomy. The regression results for financial and personnel matters are especially insignificant, but even the results for academic autonomy produce only one significant varianble (percent of the student body living in residence halls), explaining only 3% of the variance (beta = .16). Thus, we find little evidence of a relationship between a state's regulatory climate and an array of university characteristics.

Do varying degrees of regulation and autonomy exert influences on measures of university quality?

We examined the potential impact of state control on university quality. As described above, we developed a scale of faculty quality from the NRC and Graham-Diamond data (Alpha = .94) and an undergraduate factor score from the *Barron's* and *U.S. News* measures shown in Table 4. These two scales are the dependent variables for the stepwise OLS Regression results shown in Table 11. When all the various campus and state characteristics serve as predictor variables for faculty quality, the results are quite robust, producing an R-square of .88. As

Volkwein found in his earlier studies (1986, 1987, 1989), the measures of university size and wealth (funding per student) are the most influential factors. In fact, their beta weights (.61 and .63, respectively) indicate that they are four to five times more influential than the other significant variables which include undergraduate quality(.16), flagship status(.12), and non-medical(-.13). The only significant state variable is state size(.17),. Faculty quality, then, is highest in the larger and better funded universities that enjoy flagship status in the larger states, especially when they do not have financial competition from a medical school or university hospital facility.

The regression results for undergraduate quality produced eight significant variables -- five university characteristics and three state measures -- and they explain 70% of the variance. The beta weights in Table 11 indicate that the most significant influence on student quality is faculty quality(.57), followed by the percent of students living on-campus(.37), funding per student(.31), university age(.19) and size(.19). Significant state influences include mobility and growth(.26), average campus size(-.30) and public sector(-.15).

For both faculty quality and undergraduate quality, the measures of autonomy and flexibility are not significant. Since these findings are so congruent with Volkwein's earlier studies (1986, 1987, 1989), we must conclude that state financial controls and academic autonomy, as measured in this study, do not exert significant influences on university quality.

Discussion & Conclusions

Drawing from contemporary organizational theory and building upon the literature on accountability and control, this study examines the nature of state control and university autonomy. Using a combination of campus survey data, follow up telephone interviews, and information from national sources, we constructed a database containing an array of measures reflecting campus characteristics, state attributes, and the amounts of state control over a variety of academic, financial, and personnel transactions, Compared to earlier studies, ours includes not only a larger array of measures, but also a more complete set of doctoral universities.

First, we confirmed the existence of two strong and relatively independent dimensions of campus autonomy: academic and administrative. The academic dimension is composed of six separate factors: campus flexibility regarding programmatic actions, setting standards and policy, degree requirements, restructuring departments, and responding to accountability requirements. The six administrative dimensions include campus flexibility regarding managing revenues, setting tuition and fees, classifying and appointing personnel, budgeting and expending funds.

Such a two-dimensional framework is consistent with Berdahl's procedural and substantive autonomy and with Volkwein's studies in the 1980s that identified academic and administrative autonomy factors similar to these.

Second, we examined the aggregate changes between the 1980s and 1990s and found that campuses in many states have gained increased flexibility in their academic, financial and personnel transactions. While some states have given their universities more flexibility than others, the average amount of administrative flexibility since 1983 appears to have increased in American higher education. This may make it easier for university managers to cope with budget reductions and a changing environment.

We conducted telephone interviews in selected states to confirm the accuracy of the survey responses. Several states with improved flexibility reported that state financial and educational bureaucracies have been recently dismantled. In these instances, reducing the cost of state oversight practices appears to be a stronger motivation for the change than any perceived benefits for public higher education. In other states, exchange theory is at work. Significant budget reductions are accompanied by greater administrative flexibility in order to make the reductions more palatable.

Third, we assembled an array of data that reflects the economic, demographic, social and political characteristics of each state and found little evidence of a connection between these characteristics and the regulatory climate for state universities. There is a slight tendency for large states to be more controlling but this accounts for only 8% of the

variance in administrative flexibility and none in academic flexibility.

Fourth, we also find little evidence of a connection between state control and campus characteristics. Out of 14 variables in two regressions, only one is significant and it explains a mere 3% of the variance in academic flexibility. The amount of regulation is unrelated to the age, size, stature, complexity and cost of public universities. Thus, it appears from our research that state oversight and control practices are rather idiosyncratic. They appear to be related neither to the dominant state attributes, nor to the most prominent university characteristics. If state control practices are not ingrained in the economic and political culture of the state, and are not induced by the fundamental characteristics of universities, this may mean that state control practices in public higher education are more easily altered.

Fifth, we examined the evidence for a relationship between administrative flexibility on the one hand and university quality on the other. We find that measures of faculty and student quality are substantially influenced by each other and by institutional size and financial support. Neither flexibility factor exerts a significant influence on the two measures of quality. While many in higher education believe that there is a connection between autonomy and quality, this is the third study that fails to find empirical evidence to support such a claim.

This study is significant for a number of reasons. There has been much public discussion about the virtues of deregulation and decentralized, customer-based management. This study documents the extent to which such practices are taking place in higher education in 1995 and assesses the changes since the early 1980s when data were last collected. Our results confirm the existence of two major and relatively independent dimensions of campus autonomy -- academic and financial.

Not only does this study reassesses the 1995 status of university freedom from state control, but we have identified a more elaborate set of measurable autonomy dimensions than earlier studies. Additional studies can now build upon this research by investigating the influences of the separate dimensions of administrative and academic flexibility.

In this study we also place states on a continuum of administrative flexibility and examine the differences and similarities from a decade ago. Additional research might well address the similarities and differences among the states that have experienced changes in their regulatory climate.

Perhaps our most prominent finding is the lack of connection between campus autonomy and measures of effectiveness. Instead, our measures of faculty and student quality are substantially predicted by each other and by indicators of size and resources.

In his book, *The Organization of Academic Work*, Peter Blau concludes that the best faculty are draw to the larger and better supported research universities by the more favorable working conditions found in such institutions. The best students are, in turn, attracted there by the faculty. In his study of research universities, Volkwein found confirming support for Blau's earlier analysis (1989). Our findings, particularly when compared to the earlier studies by Blau and Volkwein, lead us to this conclusion: **Faculty and student quality in research and doctoral institutions is heavily influenced by the adequacy of funding and large size**. We suspect that, as an influence on quality, funding is more important than flexibility. And regarding large size, DeGroot, McMahan, and Volkwein (1992) found that economies of scale exist in research universities. Our results, like theirs, suggest that economies of scale exist in higher education, just as they do in businesses and corporations.

The empirical literature on state regulation and its impact on campuses is sparse, so this study adds important information to the field. However, many areas for further research on this topic remain. For example, no studies in higher education have attempted to measure the impact of state regulation on administrators job satisfaction, despite the linkage in the organizational literature between administrator satisfaction and performance. Research and doctoral universities in the United States constitute the world's leading educational institutions, and we should be concerned about conditions that influence their effectiveness.

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Table 1

Factor Analysis Results for Financial/Personnel Flexibility (N= 50)

Variables	Revenue Flex.	Expenditure Detail Flex.	Budget Detail Flex.	Tuition & Fee Revenue
Contract revenue	.90			
Dorm revenue	.89			
Sponsored research rev.	.85			
Food revenue	.84			
Vending revenue	.75			
Preaudit of expenditures		.82		
Salary controls		.75		
Issue checks		.69		
Position controls		.54		
Employee classification			.74	
Direct budget allocation			.72	
Budget detail			.58	
Tuition revenue				.80
Student fee revenue	.44			.74
Budget balance carryover				.50

Factor loadings under .40 not shown

Table 2

Factor Analysis Results for Academic Flexibility (N= 50)

Variables	Program. Flex	Standards	Accountability requirements.	Disciplinary Flex.	Dept. Flex.	Degree requirements
Adding graduate prog.	.91					
Adding undergrad. prog.	.91					
Degree level restrictions	.89					
Determining mission	.86					
Assistantships/ fellowships		.76				
Faculty student ratio		.75				
Teaching load		.65				
Academic standards		.60				
Academic reviews required	.48	.50				
Evidence of Effectiveness			.86			
Evidence of Student learning			.76			
Long range plan			.57			
Evidence of Program quality		.49	.50			
Discontinuing grad academic programs				.87		
Discontinuing undergrad academic programs				.87		
Setting undergrad admission criteria				.56		
Creating new academic departments					.90	
Merging academic departments					.89	
Mission statement required					.46	
Undergrad degree requirements						.93
Grad degree requirements						.93

Factor loadings under .40 not shown.

Table 3

Factor Analysis Results for State Characteristics (N= 50)

Variables	Size	Income & Education	Public sector	Mobility	Political Culture
Higher edu. enrollment	.98				
State population	.97				
Vote cast in 1992	.96				
State public expenditures	.96				
State spending on research	.92				
State spending on student aid	.83				
State private expenditures	.78				
Non English speaking population	.48	.42			
Median family income		.94			
Per capita personal income		.89			
Population 4 year college		.87			
Poverty rate		-.83			
Population Density		.57		-.42	
Appropriation per capita APPCHE5			.88		
Appropriations per 1000 income APP1INC5			.81		
Government employees			.81		
Population 5-17		-.41	.64		
% Institution public			.62		
Private higher education enrollment			-.54	-.46	
Population 65 year			-.54	-.44	
% enrollment public			.53	.47	
Population change				.82	
Mobility	-.45			.72	
Governor's institutional power				-.64	
State political culture					.84
Minority higher education enrollment					.75
% Voters in 1992					-.67
Democratic party strength					.57
Agricultural employment					-.56

Factor loadings under .40 not shown

Table 4

Factor Analysis Results for Campus Characteristics (N= 144)

Variables	Campus Size	Campus Wealth	Undergrad Student quality
Enrollment	.94		
Faculty FTE	.91		
Expenditures for academic support & student services EXPACSS	.88		
Instructional expenditures	.88		
Total volume in library	.83		
Total library expenditures	.83		
Number of doctoral programs 1982 NRC	.82		
Number of doctoral programs 1993 NRC	.82		
Total revenue	.81	.51	
Non state revenue	.76		
Research expenditures	.75	.52	
Administrative expenditures	.74	.45	
Number of Deans	.73		
Revenue from grants	.71	.62	
Grants per student		.89	
Revenue per student		.84	
Administrative expenditures per student		.78	
Non state revenue per student		.70	
Average SAT score 1993			.84
Graduation rate			.81
Freshmen retention rate			.79
Barron's competitiveness 1993			.74
Alumni giving rate 1994			.63

Factor loadings under .40 not shown

Table 5

Intercorrelations Between Seven Measures of Academic Flexibility & Seven Measures of Financial/Personnel Flexibility

Financial/ Personnel Flexibility	**Academic Flexibility**						
	Total Academic Flexibility (Flx-acad)	Accountability Requirement (Flx-Acct)	Degree Requirement (Flx-Degr)	Department Flexibility (Flx-dept)	Program discontinuance Flexibility (Flx-Disc)	Program Flexibility (Flx-Prog)	Academic Standard Flexibility (Flx-Stnd)
Total Financial Flexibility (R-Finan)	-.04	-.07	-.01	-.18	.09	.05	.01
Budget Flex. (Bflex)	-.17	-.22	.26	.09	-.14	-.14	-.28*
Budget Detail (R-Buddet)	.28*	.22	.12	-.06	.10	.10	.22
Expenditure Detail (R-Expdet)	-.04	-.10	-.14	-.15	.18	.18	-.05
Revenue Flex. (R-Rev)	-.22	.09	-.05	-.20	-.16	-.12	-.08
T&F Revenue Flex. (R-TFRev)	-.11	-.34*	.04	.05	.06	-.01	-.08
Setting Tuition Level (Tuitionl)	.19	-.03	-.06	.13	.26	.29*	-.14

* = $p < .05$

Table 6

Areas of Reduction in Financial Regulation (1983-95)

Type of Financial Control	States				
	1983		1995		
	Number	%	Number	%	12 Yr. Change
Dollars and positions by object/function	14	29	10	20	-4
Advance state approval to shift funds	11	22	2	4	-9
Elaborate preaudit requirements (two or more state agencies)	11	22	4	8	-3
State checks= both payroll & purchases	14	29	12	24	-2
Tuition treated as state income	18	37	12	24	-6
Year end budget balances recovered by state annually	25	51	20	40	-5

Financial Areas of Improved Campus Flexibility (1983-95)

Type of Financial Flexibility	States				
	1983		1995		
	Number	%	Number	%	12 Yr. Change
State dollars received lump sum	15	31	24	48	+9
Great campus flexibility to shift funds	20	41	37	74	+17
All non tuition rev. retained & managed by campus	25	51	44	88	+19
Year end budget balances retained by university	20	41	28	56	+8
Biennial budget	4	8	8	16	+4

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Table 7

Areas of Reduction in State Personnel Regulation

Type of Personnel Control	States				12 Yr. Change
	1983 (N=49)		1995(N=50)		
	#	%	#	%	
Ceiling on faculty positions	18	37	7	14	-9
Ceiling on other positions	16	3	7	14	-9
Classification system for faculty	4	8	1	2	-3
Classification system for other	25	51	4	8	-21
Salary schedule for faculty	5	10	1	2	-4
Salary schedule for other	21	43	8	16	-13

Data on State Academic Authority

Area of authority	Number and percent of states having effective authority with state agency/legislature/executive				12 Yr Change
	1983 (N=49)		1995 (N=50)		
	#	%	#	%	
Determine campus mission	7	14	9	18	+2
Add new undergrad. prog.	15	31	10	20	-5
Add new graduate program	16	33	10	20	-6
Review/dis. undergrad prog.	6	12	4	8	-2
Review/disc. grad program	7	14	4	8	-3
Add/disc. academic dept.	4	8	3	6	-1

Table 8

1983 vs. 1995: State Financial & Personnel Flexibility Ranks

State	1983 Rank	1995 Rank	Change
North Dakota	35	4	31
Connecticut	39	14	25
Wyoming	30	7	23
South Carolina	41	20	21
South Dakota	45	24	21
North Carolina	47	30	17
Maryland	43	28	15
Oregon	33	19	14
Oklahoma	25	13	12
Ohio	11	1	10
New Mexico	16	6	10
Montana	36	27	9
Hawaii	46	38	8
Indiana	8	3	5
Washington	27	23	4
Colorado	21	18	3
Arizona	29	26	3
Nevada	27	25	2
Massachusetts	38	36	2
Texas	18	17	1
Tennessee	23	22	1
Florida	43	42	1
Michigan	5	5	0
Mississippi	11	11	0
Kansas	48	48	0
New York	49	49	0
Kentucky	1	2	-1
Utah	11	15	-4
Nebraska	30	34	-4
Wisconsin	33	37	-4
West Virginia	41	45	-4
Illinois	36	41	-5
Alabama	3	9	-6
Iowa	6	12	-6
Vermont	1	8	-7
New Hampshire	3	10	-7
Maine	8	16	-8
Georgia	19	29	-10
Arkansas	30	40	-10
Virginia	40	50	-10
Louisiana	19	31	-12
Minnesota	8	21	-13
Delaware	16	33	-17
California	25	43	-18
Missouri	11	32	-21
New Jersey	23	44	-21
Idaho	11	35	-24
Rhode Island	22	47	-25
Pennsylvania	7	46	-39
Alaska	N/A	39	N/A

Table 9

Regression Beta Weights for Flexibility Measures with State Characteristics

Independent Variables	Dependent Variables (N= 50)	
	Financial & Personnel Flexibility	Academic Flexibility
State size factor	-.29	
State wealth factor		
Public sector strength factor		
State mobility factor		
State political culture factor		
% labor force in agriculture.		
Average institutional size		
Governor's power		
Higher education board		
Total R^2=	.08	N/S

Non Significant Beta Weights not Shown

State Characteristics generally are not related to Regulation/Flexibility.

Table 10

Regression Beta Weights for Flexibility Measures with Campus Characteristics

Independent Variables	Dependent Variables (N= 144)	
	Financial & Personnel Flexibility	Academic Flexibility
Campus age		
Campus size factor		
Campus wealth factor		
Campus undergrad quality factor		
Faculty quality		
Campus flagship status		
Has agricultural college		
Medical/Hospital		
% Students in dorms		.16
% Minority student		
Constitutional recognition		
Campus rural environment		
Employee unionization		
Number of Vice Presidents		
Total R^2 =	N/A	.03

Non Significant Beta Weights not Shown

Campus Characteristics generally are not related to Regulation/Flexibility.

Table 11

Table: Regression Beta Weights for Quality Measures with State & Campus Characteristics

Independent Variables	Dependent Variable	
	Faculty Quality	Undergrad Quality
Size		
Campus size factor	.61	.19
State Size factor	.17	
Wealth		
Campus wealth factor	.63	-.31
State wealth factor		
Faculty salaries		
Quality/Selectivity		
Undergrad quality factor	.16	x
Faculty quality factor	x	.57
Campus Complexity		
Medical/Hospital	-.13	
Constitutional Recognition		
Flagship	.12	
Campus age		.19
% Students in dorms		.37
Campus rural environment		
Has agricultural college		
% Minority students		
Employee unionization		
Number of Vice Presidents		
Governor's power		
State Characteristics		
Public sector strength		-.15
State mobility		.26
% Labor force in agriculture		
State political culture (Elazar)		
Average institutional size		-.30
Higher Education Board (McGuinness)		
Autonomy/Flexibility		
Financial/Personnel		
Academic		
Setting Tuition level		
Total R^2 =	.88	.70

Non Significant Beta Weights not Shown.